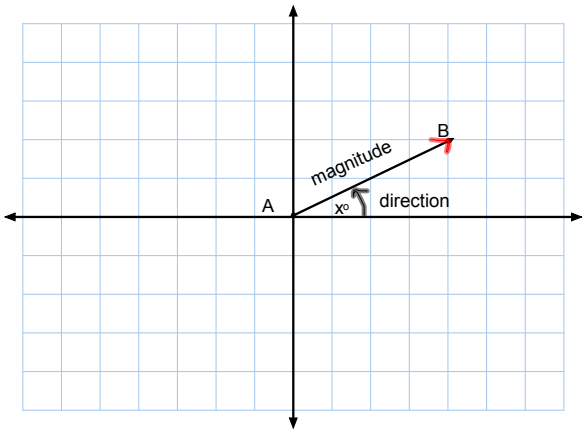
9-1 Translate Figures and Use Vectors

Vector--quantity that has both magnitude,or length, and direction

$\overrightarrow{AB}$

A initial point
B terminal point

We can use vectors to describe translations.



Standard position --initial point at origin

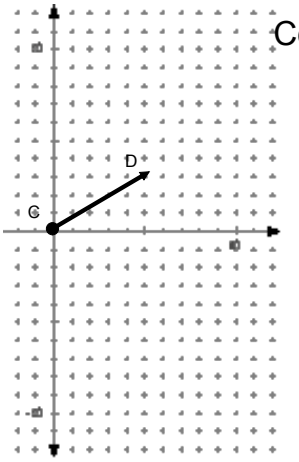
C(0, 0) D(5, 3)

$\overrightarrow{CD}$

Component form

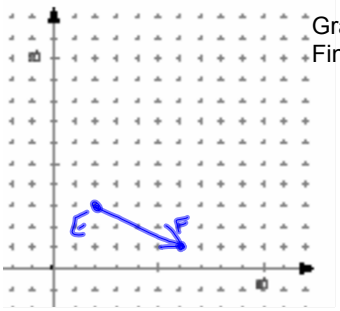
$\langle 5,3 \rangle$

$\langle x_2 - x_1, y_2 - y_1 \rangle$



E(2, 3) F(6,1)

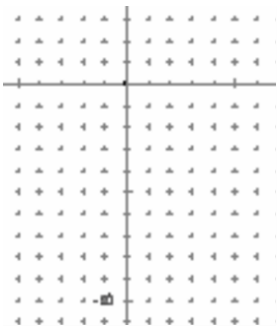
Graph $\overrightarrow{EF}$
Find the component form.



$\langle 4,-2 \rangle$

S(-3, -2) T(4, -7)

Graph $\overrightarrow{ST}$
Find the component form.

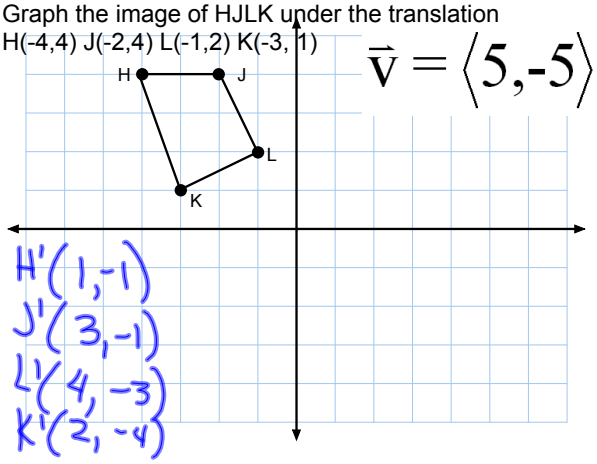


$\overrightarrow{ST}$

$\langle 7,-5 \rangle$

Graph the image of HJLK under the translation
H(-4,4) J(-2,4) L(-1,2) K(-3, 1)

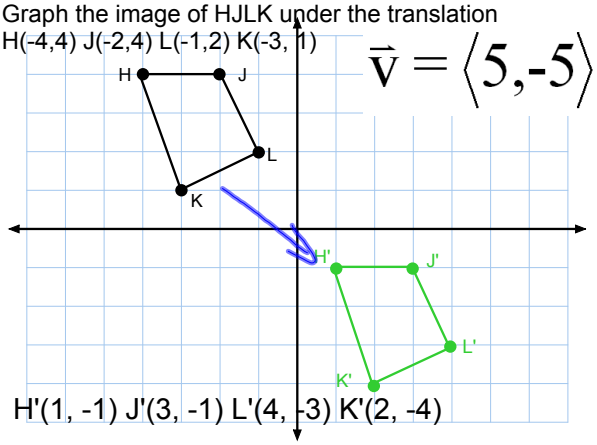
$\vec{v} = \langle 5,-5 \rangle$



H'(1,-1)
J'(3,-1)
L'(4,-3)
K'(2,-4)

Graph the image of HJLK under the translation
H(-4,4) J(-2,4) L(-1,2) K(-3, 1)

$\vec{v} = \langle 5,-5 \rangle$



H'(1, -1) J'(3, -1) L'(4, -3) K'(2, -4)

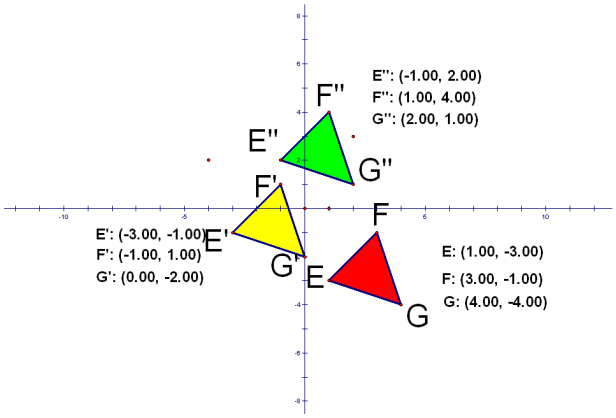
Translate Triangle EFG under
E(1, -3)
F(3, -1)
G(4, -4)

$\vec{a} = \langle -4, 2 \rangle$

and then

$\vec{b} = \langle 2, 3 \rangle$

E'(-3,-1) E''(-1,2)
F'(-1, 1) F''(1,4)
G'(0,-2) G''(2,1)



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